APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,001	10/10/2003	Stephen Gold	200309328-1	3200

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EXAMINER
CAMPOS, YAIMA

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/684,001	GOLD ET AL.
	Examiner	Art Unit	
	Yaima Campos	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>30 March 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-10,12-19 and 21-25* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-10,12-19 and 21-25* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some *   c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   The examiner acknowledges the applicant's submission of the amendment dated March

30, 2007. At this point claims 1, 17 and 23 have been amended and claims 11, 20 and 26 have

been canceled. There are 23 claims pending in the application; there are 3independent claims and

20 dependent claims, all of which are ready for examination by the examiner.

REJECTIONS BASED ON PRIOR ART

Double Patenting   .

        The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public
policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right
to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least
one examined application claim is not patentably distinct from the reference claim(s) because the examined
application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re
Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir.
1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761
(CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to
overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the
conflicting application or patent either is shown to be commonly owned with this application, or claims an invention
made as a result of activities undertaken within the scope of a joint research agreement.
    Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal
disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2.   **Claims 1, 17 and 23** are provisionally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claim 12 (dependent from claim

10) of copending Application No. 10/684,207.

3.   Initially, it should be noted that the present application and Application No. 10/684,207,

have the same inventive entity. The assignee for both applications is Hewlett-Packard

Development Company, L.P.

4.   Claimed subject matter in the instant application is fully disclosed in the referenced

copending application and would be covered by any patent granted on that copending application

since the referenced copending application and the instant application are claiming common

subject matter, as noted below. *See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir.*

1993).

5.   Furthermore, there is no apparent reason why applicant would be prevented from

presenting claims corresponding to those of the instant application in the other copending

application. See MPEP § 804.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   **Claims 1-10, 12-19 and 21-25** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Carlson et al. (US 2004/0044862) in view of Kanai et al. (US 2002/0152181).

8.   As per **claims 1, 17 and 23**, Carlson discloses a method/system/machine readable

medium having stored thereon sequences of instructions comprising:

obtaining backup job information from one or more backup applications for a plurality of backup

jobs; **[With respect to this limitation, Carlson discloses "one pool may be for data that has**

been modified or accessed recently and another pool may be used for archived or backup

data" (Page 2, Par. 0024)]

calculating a required number of scratch media needed for one or more future executions of at

least one of the backup jobs using the backup job information; and presenting the required

number of scratch media to a user **[Carlson discloses "in certain implementations, a system**

administrator may move physical volumes from one storage pool to another when

managing the tape cartridges in the storage pools. This may be performed if a

determination is made that one storage pool needs additional tapes due to an anticipated

increase of data maintained in that pool" (Page 3, Par. 0044) wherein "figure 10 illustrates

logic implemented in the tape controller 10 to move a number of empty physical volumes

from the source to the target pool... the tape controller 10 sets (at block 452) a count

variable to the administrator specified number of physical volumes to move entered in field

402 of the GUI panel 400" (Page 5, Par. 0060)].

Carlson does not explicitly disclose the details of a plurality of backup jobs nor said

calculating comprising, for at least one of the future executions, dividing an average historical

backup size of the backup job by an average capacity of a media type associated with the backup

job.

Kanai discloses a plurality of backup jobs nor said calculating comprising, for at least one

of the future executions, dividing an average historical backup size of the backup job by an

average capacity of a media type associated with the backup job as **["providing the estimation**

of future storage usage of the user by the rental storage service provider based on the

history of storage usage of the user; and reporting the estimation to the storage user" (Page

1, Pars. 0018-0019; Pars. 0202, 0225 and 0234) wherein "the rental storage service provider 2 will estimate the future usage of storage data based on the history record of the usage data stored in the storage device(s) to report to the rental storage service user 1 the estimation" (Page 4; Par. 0091; Figure 2 and related text). See recommended capacity graph (Page 8, Par. 0176 and Figure 17)].

Carlson et al. (US 2004/0044862) and Kanai et al. (US 2002/0152181) are analogous art because they are from the same field of endeavor of computer memory access and control.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the storage pool management method/system in which backup is performed as disclosed by Carlson and further provide details of a plurality of backup jobs and said calculating comprising, for at least one of the future executions, dividing an average historical backup size of the backup job by an average capacity of a media type associated with the backup job as disclosed by Kanai.

The motivation for doing so would have been because Kani discloses **[that rented storage allows users to be released from the burden of maintenance of store and thereby have less responsibility of administration (Par. 0005) wherein "the contract user will have the amount of data more than the currently contracted capacity of 300GB... this display screen may provide the user interface which is very easy to operate and easy to understand for the rental storage service users" (Pages 8-9; Par. 0176)].**

Therefore, it would have been obvious to combine Kanai et al. (US 2002/0152181) with Carlson et al. (US 2004/0044862) for the benefit of creating a method/system/machine readable

medium having stored thereon sequences of instructions to obtain the invention as specified in

claims 1, 17 and 23.

9.   As per **claims 2 and 9**, the combination of Carlson and Kanai discloses the method of

claim 1, wherein "the backup job information comprises historical backup size information for at

least one of the backup jobs" as **["providing the estimation of future storage usage of the user**

by the rental storage service provider based on the history of storage usage of the user; and

reporting the estimation to the storage user" (Page 1, Pars. 0018-0019; Pars. 0202, 0225 and

0234)].

10.   As per **claim 3**, the combination of Carlson and Kanai discloses the method of claim 1,

wherein the backup job information comprises information for one or more backup devices, each

backup device associated with at least one of the backup jobs **[Carlson discloses "tape**

cartridges 6" in different storage pool (Figure 1) and explains "one pool may be for data

that has been modified or accessed recently and another pool may be used for archived or

backup data" (Page 2, Par. 0024). Kanai discloses "providing the estimation of future

storage usage of the user by the rental storage service provider based on the history of

storage usage of the user; and reporting the estimation to the storage user" (Page 1, Pars.

0018-0019; Pars. 0202, 0225 and 0234) wherein "the storage 7 may be formed of disk

storage subsystems of the device type such as RAID (redundant array of inexpensive disks)

and NAS (network attached storage; storage devices that can be directly attached to a

network; data communication to the outside in file basis), and part thereof may include

devices for storing data in a portable medium, such as a tape drive" (Page 5, Par. 105)].

11.   As per **claim 4**, the combination of Carlson and Kanai discloses the method of claim 3,

wherein presenting the required number of scratch media comprises presenting the number of

scratch media required for each of the backup devices [**Carlson discloses "in certain**

implementations, a system administrator may move physical volumes from one storage

pool to another when managing the tape cartridges in the storage pools. This may be

performed if a determination is made that one storage pool needs additional tapes due to

an anticipated increase of data maintained in that pool" (Page 3, Par. 0044) wherein

"figure 10 illustrates logic implemented in the tape controller 10 to move a number of

empty physical volumes from the source to the target pool... the tape controller 10 sets (at

block 452) a count variable to the administrator specified number of physical volumes to

move entered in field 402 of the GUI panel 400" (Page 5, Par. 0060)].

12.   As per **claim 5**, the combination of Carlson and Kanai discloses the method of claim 1,

wherein the backup job information comprises information for one or more media pools, each

media pool associated with at least one of the backup jobs [**Carlson discloses "tape cartridges**

6" in different storage pool (Figure 1) and explains "one pool may be for data that has been

modified or accessed recently and another pool may be used for archived or backup data"

(Page 2, Par. 0024). Kanai discloses "providing the estimation of future storage usage of the

user by the rental storage service provider based on the history of storage usage of the

user; and reporting the estimation to the storage user" (Page 1, Pars. 0018-0019; Pars.

0202, 0225 and 0234) "the rental storage service provider 2 will estimate the future usage of

storage data based on the history record of the usage data stored in the storage device(s) to

report to the rental storage service user 1 the estimation" (Page 4; Par. 0091; Figure 2 and

related text) wherein "the storage 7 may be formed of disk storage subsystems of the device type such as RAID (redundant array of inexpensive disks) and NAS (network attached storage; storage devices that can be directly attached to a network; data communication to the outside in file basis), and part thereof may include devices for storing data in a portable medium, such as a tape drive" (Page 5, Par. 105)].

13.   As per **claim 6**, the combination of Carlson and Mohan discloses the method of claim 5, wherein calculating comprises, for each media pool: determining an existing number of scratch media in the media pool; calculating the number of scratch media needed for the future executions using the media pool; and subtracting the existing number from the required number ["a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool, or one pool needs fewer tape cartridges due to an anticipated decrease in data directed toward that pool" (Page 3, Par. 0044)].

14.   As per **claim 7**, the combination of Carlson and Kanai discloses the method of claim 6, wherein determining an existing number comprises determining if a protected period for one or more existing data media has expired [Kanai discloses "the reporting process will also be executed if a predetermined period of time has expired" (Par. 0158) which comprises a time period for the contract for data storage].

15.   As per **claims 8, 18-19 and 24-25**, the combination of Carlson and Kanai discloses the method of claim 5, wherein presenting the required number of scratch media comprises presenting the number of scratch media required for each of the media pools ["in certain

implementations, a system administrator may move physical volumes from one storage

pool to another when managing the tape cartridges in the storage pools. This may be

performed if a determination is made that one storage pool needs additional tapes due to

an anticipated increase of data maintained in that pool" (Page 3, Par. 0044) wherein

"figure 10 illustrates logic implemented in the tape controller 10 to move a number of

empty physical volumes from the source to the target pool... the tape controller 10 sets (at

block 452) a count variable to the administrator specified number of physical volumes to

move entered in field 402 of the GUI panel 400" (Page 5, Par. 0060)].

16.   As per **claim 10**, the combination of Carlson and Kanai discloses the method of claim 5,

further comprising presenting a report to the user identifying at least one media pool having a

greater amount of scratch media than the required number of scratch media for the at least one

media pool [**With respect to this limitation, Carlson discloses "one pool needs fewer tape**

cartridges due to an anticipated decrease in data directed toward that pool. Figs. 3, 7 and 9

illustrate different graphical user interface (GUI) panels presented by the tape controller

10 logic to enable the system administrator to transfer or move tape cartridges 6a, 6b... 6j

(physical volumes) from one pool to another" (Page 3, Par. 0044)].

17.   As per claims **12-13**, the combination of Carlson and Kanai discloses The method of

claim 1, wherein the backup job information includes information for one or more media pools,

each media pool associated with the backup jobs, and calculating the required number of scratch

media further comprises totaling the number of media required for each media pool to be used by

the future executions;

wherein the backup job information includes information for one or more backup devices associated with the backup jobs, and calculating the required number of scratch media further comprises totaling the number of media required for each backup device to be used by future executions [Carlson discloses "in certain implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool" (Page 3, Par. 0044) wherein "figure 10 illustrates logic implemented in the tape controller 10 to move a number of empty physical volumes from the source to the target pool... the tape controller 10 sets (at block 452) a count variable to the administrator specified number of physical volumes to move entered in field 402 of the GUI panel 400" (Page 5, Par. 0060). Kanai discloses "providing the estimation of future storage usage of the user by the rental storage service provider based on the history of storage usage of the user; and reporting the estimation to the storage user" (Page 1, Pars. 0018-0019; Pars. 0202, 0225 and 0234) wherein "the rental storage service provider 2 will estimate the future usage of storage data based on the history record of the usage data stored in the storage device(s) to report to the rental storage service user 1 the estimation" (Page 4; Par. 0091; Figure 2 and related text). See recommended capacity graph (Page 8, Par. 0176 and Figure 17)].

18.   As per **claim 14**, the combination of Carlson and Kanai discloses the method of claim 1, wherein calculating comprises calculating the number of scratch media required for the future executions of the backup jobs scheduled within a predetermined period of time [**Carlson**

discloses "in certain implementations, a system administrator may move physical volumes from one storage pool to another when managing the tape cartridges in the storage pools. This may be performed if a determination is made that one storage pool needs additional tapes due to an anticipated increase of data maintained in that pool" (Page 3, Par. 0044). Furthermore, Kanai discloses estimation of future storage based on usage history of the user (Page 1, Pars. 0018-0019)].

19.   As per **claims 15 and 21**, the combination of Carlson and Kanai discloses the method of claim 1, further comprising receiving from the user a list of one or more media to be used for at least a portion of the required scratch media [**Carlson discloses "a GUI panel 100 to allow the administrator to specify a range of physical volumes in the From and TO fields 102, 104 of a selectable media type field 106 may indicate one or more allowable media types, up to all types. Alternatively, the user may select a predefined list of physical volumes to move to the target pool 108"** (Pars. 0045, 0049-0050, 0057)].

20.   As per **claims 16 and 22**, the combination of Carlson and Kanai discloses the method of claim 15, further comprising for each media in the list, determining if the media is a valid scratch media [**With respect to this limitation, Carlson discloses "a reclamation operation is performed with respect to a tape cartridge when the percentage of available space on the cartridge, i.e., the percent of the tape not filled with active data, exceeds a predefined reclamation threshold. Once the available or unused space on a tape cartridge reaches the reclamation threshold, the tape controller 10 moves the active data to another tape cartridge and makes reclaimed tape cartridge free to be used for new writes"** (Par. 0046); thereby, determining whether a tape is valid scratch media].

CLOSING COMMENTS

Examiner's Note

Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

a. STATUS OF CLAIMS IN THE APPLICATION

21.   The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. 707.07(i)**:

a(1) CLAIMS REJECTED IN THE APPLICATION

22.   Per the instant office action, claims 1-10, 12-19, and 21-25 have received an action on the merits and are subject to a non-final rejection.

b. DIRECTION OF FUTURE CORRESPONDENCES

23.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaima Campos whose telephone number is (571) 272-1232. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.
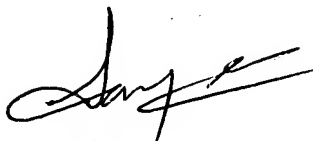
IMPORTANT NOTE

24.   If attempts to reach the above noted Examiner by telephone are unsuccessful, the

Examiner's supervisor, Mr. Sanjiv Shah, can be reached at the following telephone number: Area

Code (571) 272-4098.

The fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300. Information regarding the status of an application may be obtained

from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions

on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

May 17, 2007   Yaima Campos
                                                               Examiner
                                                               Art Unit 2185

SANJIV SHAH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100